

SEQUENCE LISTING

<110> Malaysian Palm Oil Board

<120> A molecular marker

<130> 2487340/EJH

<150> AU PR2213

<151> 2000-12-20

<160> 9

<170> PatentIn version 3.0

<210> 1

<211> 573

<212> DNA

<213> oil palm

<220>

<221> CDS

<222> (1)..(573)

<400> 1

atg ccg ggg cta acg atc ggc gac acg atc ccg aac ctg gag gtg gag 48

Met Pro Gly Leu Thr Ile Gly Asp Thr Ile Pro Asn Leu Glu Val Glu

1 5 10 15

acc acg cac ggg aag atc cgg atc cac gac tac gtc ggc gat ggt tgg 96

Thr Thr His Gly Lys Ile Arg Ile His Asp Tyr Val Gly Asp Gly Trp

20 25 30

gcc atc atc ttc tcc cat ccc gcg gat ttc aca ccc gtg tgc acg acg 144

Ala Ile Ile Phe Ser His Pro Ala Asp Phe Thr Pro Val Cys Thr Thr

35 40 45

gag ctg ggg aag atg gcg gcg tac gcg gag gag ttc gag aaa aga ggg 192

Glu	Leu	Gly	Lys	Met	Ala	Ala	Tyr	Ala	Glu	Glu	Phe	Glu	Lys	Arg	Gly	
50								55							60	
gtg aag ctg cta ggc atc tcc tgc gac gat gtc aag tgc cac atg gaa																240
Val Lys Leu Leu Gly Ile Ser Cys Asp Asp Val Lys Cys His Met Glu																
65							70								80	
tgg atc aaa gac gtc gag gcc tac acg ccc gga tgt cgc gta aca tat																288
Trp Ile Lys Asp Val Glu Ala Tyr Thr Pro Gly Cys Arg Val Thr Tyr																
							85								95	
cca att gta gcc gac ccc aag agg gag gtg atc aaa ctg ctg aac atg																336
Pro Ile Val Ala Asp Pro Lys Arg Glu Val Ile Lys Leu Leu Asn Met																
							100								110	
gta gac cct gag gag aag gac tca aat ggg aac cag ctc ccg tca cgg																384
Val Asp Pro Glu Glu Lys Asp Ser Asn Gly Asn Gln Leu Pro Ser Arg																
							115								125	
gcc ctt cat ata gtg ggc cct gat aag aag gtt aag ctg agc ttt ctg																432
Ala Leu His Ile Val Gly Pro Asp Lys Lys Val Lys Leu Ser Phe Leu																
							130								140	
tac ccg gcg tcg acg ggg cgg aac atg gag gag gtg gtc agg gtg ttg																480
Tyr Pro Ala Ser Thr Gly Arg Asn Met Glu Glu Val Val Arg Val Leu																
							145								160	
gag tcg ctt cag aag acg atc aag tat aag gtg gcg acc cca gcg aac																528
Glu Ser Leu Gln Lys Thr Ile Lys Tyr Lys Val Ala Thr Pro Ala Asn																
							165								175	
tgg aaa ccg ggg gag ccg gtg gtg atc tcg ccc gag cgt gtc caa																573
Trp Lys Pro Gly Glu Pro Val Val Ile Ser Pro Glu Arg Val Gln																
							180								190	

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 <212> PRT

<213> oil palm

<400> 2

Met Pro Gly Leu Thr Ile Gly Asp Thr Ile Pro Asn Leu Glu Val Glu  
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Thr Thr His Gly Lys Ile Arg Ile His Asp Tyr Val Gly Asp Gly Trp  
20 25 30

Ala Ile Ile Phe Ser His Pro Ala Asp Phe Thr Pro Val Cys Thr Thr  
35 40 45

Glu Leu Gly Lys Met Ala Ala Tyr Ala Glu Glu Phe Glu Lys Arg Gly  
50 55 60

Val Lys Leu Leu Gly Ile Ser Cys Asp Asp Val Lys Cys His Met Glu  
65 70 75 80

Trp Ile Lys Asp Val Glu Ala Tyr Thr Pro Gly Cys Arg Val Thr Tyr  
85 90 95

Pro Ile Val Ala Asp Pro Lys Arg Glu Val Ile Lys Leu Leu Asn Met  
100 105 110

Val Asp Pro Glu Glu Lys Asp Ser Asn Gly Asn Gln Leu Pro Ser Arg  
115 120 125

Ala Leu His Ile Val Gly Pro Asp Lys Lys Val Lys Leu Ser Phe Leu  
130 135 140

Tyr Pro Ala Ser Thr Gly Arg Asn Met Glu Glu Val Val Arg Val Leu  
145 150 155 160

Glu Ser Leu Gln Lys Thr Ile Lys Tyr Lys Val Ala Thr Pro Ala Asn  
165 170 175

Trp Lys Pro Gly Glu Pro Val Val Ile Ser Pro Glu Arg Val Gln  
180 185 190

<210> 3  
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 <212> DNA  
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<220>  
 <221> CDS  
 <222> (28)..(600)

<400> 3  
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 Met Pro Gly Leu Thr Ile Gly Asp Thr  
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 atc ccg aac ctg gag gtg gag acc acg cac ggg aag atc cgg atc cac 102  
 Ile Pro Asn Leu Glu Val Glu Thr Thr His Gly Lys Ile Arg Ile His  
 10 15 20 25  
 gac tac gtc ggc gat ggt tgg gcc atc atc ttc tcc cat ccc gcg gat 150  
 Asp Tyr Val Gly Asp Gly Trp Ala Ile Ile Phe Ser His Pro Ala Asp  
 30 35 40  
 ttc aca ccc gtg tgc acg acg gag ctg ggg aag atg gcg gcg tac gcg 198  
 Phe Thr Pro Val Cys Thr Thr Glu Leu Gly Lys Met Ala Ala Tyr Ala  
 45 50 55  
 gag gag ttc gag aaa aga ggg gtg aag ctg cta ggc atc tcc tgc gac 246  
 Glu Glu Phe Glu Lys Arg Gly Val Lys Leu Leu Gly Ile Ser Cys Asp  
 60 65 70  
 gat gtc aag tgc cac atg gaa tgg atc aaa gac gtc gag gcc tac acg 294  
 Asp Val Lys Cys His Met Glu Trp Ile Lys Asp Val Glu Ala Tyr Thr  
 75 80 85  
 ccc gga tgt cgc gta aca tat cca att gta gcc gac ccc aag agg gag 342  
 Pro Gly Cys Arg Val Thr Tyr Pro Ile Val Ala Asp Pro Lys Arg Glu  
 90 95 100 105

gtg atc aaa ctg ctg aac atg gta gac cct gag gag aag gac tca aat 390  
Val Ile Lys Leu Leu Asn Met Val Asp Pro Glu Glu Lys Asp Ser Asn  
110 115 120

ggg aac cag ctc ccg tca cgg gcc ctt cat ata gtg ggc cct gat aag 438  
Gly Asn Gln Leu Pro Ser Arg Ala Leu His Ile Val Gly Pro Asp Lys  
125 130 135

aag gtt aag ctg agc ttt ctg tac ccg gcg tcg acg ggg cgg aac atg 486  
Lys Val Lys Leu Ser Phe Leu Tyr Pro Ala Ser Thr Gly Arg Asn Met  
140 145 150

gag gag gtg gtc agg gtg ttg gag tcg ctt cag aag acg atc aag tat 534  
Glu Glu Val Val Arg Val Leu Glu Ser Leu Gln Lys Thr Ile Lys Tyr  
155 160 165

aag gtg gcg acc cca gcg aac tgg aaa ccg ggg gag ccg gtg gtg atc 582  
Lys Val Ala Thr Pro Ala Asn Trp Lys Pro Gly Glu Pro Val Val Ile  
170 175 180 185

tcg ccc gag cgt gtc caa tgaggaggcc aagcagatgt tcccgcaggg 630  
Ser Pro Glu Arg Val Gln  
190

agttgagaat gtgaatctcc catcgaagaa ggattacctc cgcttcacaa aagtctaatag 690

ttgttgggcc gtccgtgata tgttcataag tggtttctgg ggcccgactg tatactgtgt 750

tgtcgtgtta tatgtttgtg ttggtatcat gtagtttgtg ccttagggga gtttgatat 810

taattttag tagtttatgttaa ttattaaagt ttttaccatg agattaaaaa aaaaaaaaaa 870

aaa 873

<210> 4  
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<212> PRT

<213> oil palm

<400> 4

Met Pro Gly Leu Thr Ile Gly Asp Thr Ile Pro Asn Leu Glu Val Glu  
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Thr Thr His Gly Lys Ile Arg Ile His Asp Tyr Val Gly Asp Gly Trp  
20 25 30

Ala Ile Ile Phe Ser His Pro Ala Asp Phe Thr Pro Val Cys Thr Thr  
35 40 45

Glu Leu Gly Lys Met Ala Ala Tyr Ala Glu Glu Phe Glu Lys Arg Gly  
50 55 60

Val Lys Leu Leu Gly Ile Ser Cys Asp Asp Val Lys Cys His Met Glu  
65 70 75 80

Trp Ile Lys Asp Val Glu Ala Tyr Thr Pro Gly Cys Arg Val Thr Tyr  
85 90 95

Pro Ile Val Ala Asp Pro Lys Arg Glu Val Ile Lys Leu Leu Asn Met  
100 105 110

Val Asp Pro Glu Glu Lys Asp Ser Asn Gly Asn Gln Leu Pro Ser Arg  
115 120 125

Ala Leu His Ile Val Gly Pro Asp Lys Lys Val Lys Leu Ser Phe Leu  
130 135 140

Tyr Pro Ala Ser Thr Gly Arg Asn Met Glu Glu Val Val Arg Val Leu  
145 150 155 160

Glu Ser Leu Gln Lys Thr Ile Lys Tyr Lys Val Ala Thr Pro Ala Asn  
165 170 175

Trp Lys Pro Gly Glu Pro Val Val Ile Ser Pro Glu Arg Val Gln  
180 185 190

<210> 5  
<211> 17  
<212> DNA  
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<400> 5  
aggaggattg tgcagag

17

<210> 6  
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<400> 6  
caaactctca gctaggca

18

<210> 7  
<211> 218  
<212> PRT  
<213> Hordeum vulgare

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Met Pro Gly Leu Thr Ile Gly Asp Thr Val Pro Asn Leu Glu Leu Asp  
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Ser Thr His Gly Lys Ile Arg Ile His Asp Tyr Val Gly Asn Gly Tyr  
20 25 30

Val Ile Leu Phe Ser His Pro Gly Asp Phe Thr Pro Val Cys Thr Thr  
35 40 45

Glu Leu Ala Ala Met Ala Asn Tyr Ala Lys Glu Phe Glu Lys Arg Gly  
50 55 60

Val Lys Leu Leu Gly Ile Ser Cys Asp Asp Val Gln Ser His Lys Glu  
65 70 75 80

Trp Thr Lys Asp Ile Glu Ala Tyr Lys Pro Gly Ser Lys Val Thr Tyr  
85 90 95

Pro Ile Met Ala Asp Pro Asp Arg Ser Ala Ile Lys Gln Leu Asn Met  
100 105 110

Val Asp Pro Asp Glu Lys Asp Ala Gln Gly Gln Leu Pro Ser Arg Thr  
115 120 125

Leu His Ile Val Gly Pro Asp Lys Val Val Lys Leu Ser Phe Leu Tyr  
130 135 140

Pro Ser Cys Thr Gly Arg Asn Met Asp Glu Val Val Arg Ala Val Asp  
145 150 155 160

Ser Leu Leu Thr Ala Ala Lys His Lys Val Ala Thr Pro Ala Asn Trp  
165 170 175

Lys Pro Gly Glu Cys Val Val Ile Ala Pro Gly Val Ser Asp Glu Glu  
180 185 190

Ala Lys Lys Met Phe Pro Gln Gly Phe Glu Thr Ala Asp Leu Pro Ser  
195 200 205

Lys Lys Gly Tyr Leu Arg Phe Thr Lys Val  
210 215

<210> 8

<211> 216

<212> PRT

<213> Arabidopsis thaliana

<400> 8

Met Pro Gly Ile Thr Leu Gly Asp Thr Val Pro Asn Leu Glu Val Glu  
1 5 10 15

Thr Thr His Asp Lys Phe Lys Leu His Asp Tyr Phe Ala Asn Ser Trp  
20 25 30



Thr Val Leu Phe Ser His Pro Gly Asp Phe Thr Pro Val Cys Thr Thr  
35 40 45

Glu Leu Gly Ala Met Ala Lys Tyr Ala His Glu Phe Asp Lys Arg Gly  
50 55 60

Val Lys Leu Leu Gly Leu Ser Cys Asp Asp Val Gln Ser His Lys Asp  
65 70 75 80

Trp Ile Lys Asp Ile Glu Ala Phe Asn His Gly Ser Lys Val Asn Tyr  
85 90 95

Pro Ile Ile Ala Asp Pro Asn Lys Glu Ile Ile Pro Gln Leu Asn Met  
100 105 110

Ile Asp Pro Ile Glu Asn Gly Pro Ser Arg Ala Leu His Ile Val Gly  
115 120 125

Pro Asp Ser Lys Ile Lys Leu Ser Phe Leu Tyr Pro Ser Thr Thr Gly  
130 135 140

Arg Asn Met Asp Glu Val Leu Arg Ala Leu Asp Ser Leu Leu Met Ala  
145 150 155 160

Ser Lys His Asn Asn Lys Ile Ala Thr Pro Val Asn Trp Lys Pro Asp  
165 170 175

Gln Pro Val Val Ile Ser Pro Ala Val Ser Asp Glu Glu Ala Lys Lys  
180 185 190

Met Phe Pro Gln Gly Phe Lys Thr Ala Asp Leu Pro Ser Lys Lys Gly  
195 200 205

Tyr Leu Arg His Thr Glu Val Ser  
210 215

<210> 9

<211> 272

<212> PRT

<213> Brassica campestri

<400> 9

Met Ala Ser Val Ala Ser Ser Thr Thr Leu Ile Ser Ser Ser Ala Ser  
1 5 10 15

Val Leu Pro Ala Thr Lys Ser Ser Leu Leu Pro Ser Pro Ser Leu Ser  
20 25 30

Phe Leu Pro Thr Leu Ser Ser Pro Ser Pro Ser Ala Ser Leu Arg Ser  
35 40 45

Leu Val Pro Leu Pro Ser Pro Gln Ser Ala Ser Ser Ser Arg Arg Ser  
50 55 60

Phe Ala Val Lys Gly Gln Thr Asp Asp Leu Pro Leu Val Gly Asn Lys  
65 70 75 80

Ala Pro Asp Phe Glu Ala Glu Gly Val Phe Asp Gln Glu Phe Ile Lys  
85 90 95

Phe Ile Lys Val Lys Leu Ser Asp Tyr Ile Gly Lys Lys Tyr Val Ile  
100 105 110

Leu Phe Phe Leu Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile  
115 120 125

Thr Ala Phe Ser Asp Arg Tyr Ala Glu Phe Glu Lys Leu Asn Thr Glu  
130 135 140

Val Leu Gly Val Ser Val Asp Ser Val Ser Val Phe Ser His Leu Ala  
145 150 155 160

Gly Val Gln Thr Asp Arg Lys Phe Gly Gly Leu Gly Asp Leu Asn Tyr  
165 170 175

Pro Leu Ile Ser Asp Val Thr Lys Ser Ile Ser Lys Ser Phe Gly Val  
180 185 190

Leu Ile His Asp Gln Gly Ile Ala Leu Arg Gly Leu Phe Ile Ile Asp  
195 200 205

Lys Glu Gly Val Ile Gln His Ser Thr Ile Asn Leu Gly Ile Gly Arg  
210 215 220

Ser Val Asp Glu Thr Met Arg Thr Leu Gln Ala Leu Gln Tyr Ile Gln  
225 230 235 240

Glu Gly Pro Gly Glu Val Cys Pro Ala Gly Trp Lys Pro Gly Glu Lys  
245 250 255

Ser Met Lys Pro Asp Pro Lys Leu Ser Lys Glu Leu Phe Ser Ala Ile  
260 265 270